Before the
Federal Communications Commission
Washington, D.C. 20554

Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
International Comparison and Consumer Survey Requirements in the Broadband Data Improvement Act	)	GN Docket No. 09-47
A National Broadband Plan for Our Future	)	GN Docket No. 09-51
Development of Advanced Telecommunications Capability to All Americans in a Reasonable and Timely Fashion and Possible Steps to Accelerate Such Deployment Pursuant to Section 706 of the Telecommunications Act	)	GN Docket No. 09-137
Petition of Public Knowledge, Free Press et al. for Rulemaking Establishing A Competitive Market for Interoperable Video Devices	)	RM-_____

To: The Commission

PETITION FOR RULEMAKING
OF
PUBLIC KNOWLEDGE, FREE PRESS, MEDIA ACCESS PROJECT, CONSUMERS UNION, CCTV CENTER FOR MEDIA & DEMOCRACY, OPEN TECHNOLOGY INITIATIVE OF NEW AMERICA FOUNDATION

December 18, 2009

SUMMARY

Public Knowledge, Free Press, Media Access Project, Consumers Union, CCTV Center for Media & Democracy, and the Open Technology Initiative of New America Foundation ("Petitioners") file this petition to ask that the Commission initiate a rulemaking to address the lack of competition in the video device market. Specifically, Petitioners ask that the Commission (1) combine all open proceedings relating to cable set-top box commercial availability and device interoperability, (2) freeze all separable security waiver requests until the rules are updated, and (3) issue a Notice of Proposed Rulemaking to require a standards-based gateway for accessing the video services of all multichannel video programming distributors, or MVPDs.

There is no competitive market for video devices at present. A multitude of technical and licensing constraints create substantial barriers to entry that limit development of interoperable devices. Innovation for video devices, and competition over price for such devices, is thus reduced. Furthermore, each MVPD platform uses different network technologies, making it costly for manufacturers to develop a single device that works across all MVPD platforms. As a result, consumers face greater switching costs between MVPDs, often pay unnecessarily high costs to lease equipment, and competition among MVPDs suffers.

The Commission recently issued a Public Notice, in the course of its development of a National Broadband Plan, seeking comment on these competitive deficiencies of the video devices market. As the Commission acknowledges, the directives of Sections 629 and 624A of the Communications

Act—which mandate Commission action to create a competitive market for video devices—have not been fulfilled. This inquiry is an important first step toward fulfilling the statutory mandate that the Commission promote a competitive market in video devices—but much more needs to be done.

To fulfill the mandate of Sections 629 and 624A of the Communications Act, and to spur the development of a retail market for interoperable video devices that work across all MVPD delivery platforms, the Petitioners respectfully request that the Commission adopt a standards-based universal video gateway specification. The gateway would serve as a common bridge between diverse MVPDs and consumer video devices, handling only minimal tasks such as service discovery and security. By requiring a standards-based approach to development and design of the gateway, the Commission will ensure that the design and licensing of the technology is not overly controlled by one market segment at the expense of others.

In order to rectify the substantive and procedural inadequacies of the Commission's current rules regarding video devices, and to remedy the structural deficiencies in the market for devices that access MVPD services, the Commission should grant this Petition by initiating a rulemaking proceeding.

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INTRODUCTION

In the 1990s,[1] Congress decided that the market for the devices that consumers attach to their television sets, such as set-top boxes and VCRs,[2] should be vibrant and competitive. By enacting Sections 629 and 624A of the Communications Act, Congress sought to ensure that devices able to receive and display video signals would be readily available from retail stores, like most consumer electronics, not primarily rented from cable companies. Realizing that some coordination was necessary to help the market settle on common technologies, Congress instructed the FCC to enact regulations ensuring that set-top boxes provided by entities other than cable operators would be commercially available,[3] competitive with cable-supplied devices, and interoperable.[4]

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[1] The laws in question are the Cable Television Consumer Protection and Competition Act of 1992, Pub. L. No. 102-385, 106 Stat. 1460 ("1992 Act") (the most relevant portion of which is now Section 624A of the Communications Act, regarding video device compatibility, codified at 47 U.S.C. § 544a), and the Telecommunications Act of 1996, P.L. No. 104-104, 110 Stat. 56 ("1996 Act") (the most relevant portion of which is now Section 629 of the Communications Act, regarding the retail availability of video devices, codified at 47 U.S.C. § 549).

[2] "Set-top boxes" are the devices typically needed to descramble programming and prevent theft of services. In the 1996 Act, they were referred to generally as "navigation devices," because they are used to choose between programming channels. At the time of the 1992 Act, VCRs were the prevalent devices for recording programming. "Video cassette recorders" should be read to include modern recorders (including, but not limited to, DVRs) as well as modern playback devices (including, but not limited to, DVD and Blu-Ray players*). See* Implementation of Section 304 of the Telecommunications Act of 1996, *Report & Order*, 13 FCC Rcd. 14775, 14785, ¶ 26 (1998) ("Navigation Devices Order") ("[W]e believe that Section 629 is intended to result in the widest possible variety of navigation devices being commercially available to the consumer."); *see also Fortnightly Corp. v. United Artists Television, Inc.*, 392 U.S. 390, 395-396 (1968) (Courts interpret statutory language to reflect technological change).

[3] 47 U.S.C. §§ 544a(2)(C), 549(a); Implementation of Section 304 of the Telecommunications Act of 1996, *Second Report & Order & Second Further Notice of Proposed Rulemaking*, 18 FCC Rcd. 20,885, 20,905, ¶ 46 ("The mandate of Section 629 … requires the Commission to assure the commercial availability of navigation devices—meaning that the Commission must persist in its efforts until commercial availability is achieved."). Section 549 also mentions "competitive availability," which is further

Since the 1990s, technology has changed. DVDs, Blu-Rays, and DVRs have largely replaced VCRs. The digital television transition has been carried out successfully by broadcasters, and multichannel video programming distributors (MVPDs) now deliver video content not only through cable but also fiber, copper telephone lines, and satellite. This technological evolution has benefited consumers in many ways.

Unfortunately, these benefits do not extend to the market for set-top boxes and other devices that connect to MVPD services (in this Petition, these devices will be referred to collectively as "video devices").[5] The national policy goal of promoting a competitive market in video devices has not been realized. As FCC Media Bureau Chief Bill Lake recently observed, "[t]he 1996 Act fostered innovation of set-top boxes, but that market has failed to materialize … Data suggests this has not fostered innovation and a variety of boxes."[6] Because the current rules do not facilitate a true market for competitive, interoperable video devices, consumers still rent most set-top boxes from their MVPDs. As a result, innovation and competition are limited, and prices are artificially high.

The Commission's current rules have led to the creation and approval of CableCARD, a technology that has proved insufficient in a number of ways.

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evidence that Congress did not merely intend for devices to be "available" but also that non-MVPD devices be *competitive* with MVPD-supplied devices.

[4] *Id.*

[5] "Video device" or "Equipment" means any consumer electronic device that attaches to or accesses MVPD systems to receive and decode video programming or other MPVPD services. Such video devices include but are not limited to set-top boxes, DVRs, televisions, and home theater PCs ("HTPCs").

[6] Cecilia Kang, *FCC Takes on Cable, Satellite on Television Set-Top Boxes*, WASH. POST TECH BLOG, Nov. 18, 2009, http://voices.washingtonpost.com/posttech/2009/11/fcc_takes_on_cable_satellite_o.html.

First, although today a sufficient technical solution should encompass all MVPD platforms, CableCARD was designed to be solely a cable technology. Furthermore, even though it was developed by the cable industry, cable operators have resisted CableCARD's deployment. But even on a cable system that supports CableCARD, without additional functionality in the video device, CableCARD cannot access two-way and interactive cable services.[7] It is difficult to get CableCARD devices certified,[8] and device makers often balk at the licensing terms surrounding the technology. Finally, some of the rules implementing CableCARD and designed to develop a market for video devices, such as the "separable security requirement,"[9] have been undermined by extensions and repeated waivers,[10] limiting their effectiveness. For these reasons, the current market is far from sufficient.

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[7] CableLabs, OpenCable—CableCARD Primer, http://www.opencable.com/primer/cablecard_primer.html ("The ability to support two-way and interactive cable services such as VOD and SDV is a responsibility shared between the CableCARD module and the Host. There are circuits and functionalities needed on both sides of the CableCARD module interface to complete the connection and to enable full two-way signaling.").

[8] *See, e.g.*, Letter from Julie M. Kearney, Senior Director and Regulatory Counsel, Consumer Electronics Association, to Marlene Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80 (March 6, 2008).

[9] *See* Navigation Devices Order at ¶ 69 (requiring MVPDs to make available by July 1, 2000 a security element separate from the basic navigation device (i.e. CableCARD), and prohibiting MVPDs from providing devices that do not themselves use the separable security element); Implementation of Section 304 of the Telecommunications Act of 1996, *Order and Further Notice of Proposed Rulemaking*, 18 FCC Rcd 7924, 7926, ¶ 4 (2003) (extending the deadline for compliance to July 2006); Implementation of Section 304 of the Telecommunications Act of 1996, *Second Report & Order*, 20 FCC Rcd. 6794, 6810, ¶ 31 (2005) (finally extending the deadline for compliance to July 1, 2007).

[10] The competitive availability mandate has been undermined by the repeated waivers and other procedural inadequacies detailed *infra*, Section IV(B), such as the Commission's prospective announcement that it will expeditiously grant waivers for devices that meet certain criteria, which has effectively repealed the "integration ban" for whole classes of devices. *See* Evolution Broadband, LLC's Request for Waiver of Section 76.1204(a)(1) of the Commission's Rules, *Memorandum Opinion & Order*, 24 FCC Rcd. 7890, 7897, ¶ 15 (2009). While the FCC's motivations in granting these waivers may be sound, the fact that the waivers were necessary in the first place points to a systematic

Even the cable industry has acknowledged the failures of CableCARD. Kyle McSlarrow, head of the National Cable and Telecommunications Association (NCTA), only a few weeks ago stated that NCTA "welcome[s] the opportunity to explore repealing" the current regime.[11]

In the past, the Commission has addressed inadequacies in the interoperability rules piecemeal, developing national policy on a case-by-case basis. This process has failed to achieve real reform, or realize Congressional intent. Rather than continuing in this manner, the Commission should revisit the rules in their entirety, question long-held assumptions about the structure of the MVPD market, and adopt platform-neutral standards[12] to ensure video device interoperability.

Finally, given that the inadequacies in the current regime have been widely acknowledged and documented by the cable industry, the consumer electronics industry, public interest groups, and the Commission,[13] and given the substantial history already developed over many years through many still-open

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failure of current Section 629 implementation. Because the market for competitive devices has not been allowed to develop, low-cost devices that take advantage of economies of scale and that do not run afoul of the integration ban likewise have not been developed; indeed, given the likelihood for grant of waivers, there is no economic motivation for the development of these devices.

[11] Cecilia Kang, *Consumer Electronics Group Calls for Broad FCC Set Top Box Review*, WASH. POST TECH BLOG, Nov. 24, 2009, http://voices.washingtonpost.com/posttech/2009/11/its_been_more_than_six.html.

[12] *See infra*, section V.

[13] *E.g.*, Comment Sought on Video Device Innovation, *NBP Public Notice # 27*, DA 09-2519 (rel. Dec. 3, 2009) (*NBP Public Notice #27)*; Letter of Kyle McSlarrow, President and CEO, NCTA, to Mr. Carlos Kirjner, Senior Advisor to the Chairman on Broadband and Mr. William Lake, Chief, Media Bureau, CS Docket No. 97-80, Dec. 4, 2009 ("McSlarrow Letter"); Letter of Public Knowledge, Free Press, Media Access Project, New America Foundation, and U.S. Public Interest Research Group, to Ms. Marlene H. Dortch, Secretary, Federal Communications Commission, CS Docket No. 97-80, Nov. 3, 2008; Kang, *supra* note 11.

proceedings, more than an "inquiry" is appropriate at this time. The NCTA nonetheless has urged the Commission to initiate a *Notice of Inquiry* to examine "whether" a robust retail marketplace can be achieved.[14] That policy question was answered definitively by Congress, when it adopted Section 629 many years ago. Furthermore, many years of open proceedings have developed a copious record making clear that the current regulations are insufficient, and establishing a path towards effective reform. Finally, the Commission's recent *NBP Public Notice #27* asks broad questions about how to address the acknowledged problems, and will therefore serve the same information-gathering function that a new NOI would. Thus, the Commission should proceed directly to a Notice of Proposed Rulemaking.

To carry out Congress's intent, and to bring the video market into the twenty-first century, the Petitioners ask the FCC to provide systemic fixes for its implementation of Sections 629 and 624A. The Commission should adopt rules establishing a universal video services gateway specification. Petitioners offer the principles and proposed rules contained in this Petition to serve as the basis of a proposed rulemaking, centering around a completely standards-based solution[15] that would be required for all MVPDs.

Finally, to limit continued uncertainty in the video devices market while the Commission develops more comprehensive and meaningful rules, the Commission should combine all open proceedings relating to video device

[14] Letter of NCTA, *supra* note 13, at 4.

[15] *See infra*, section V, for more on what the Petitioners mean by "standards-based." In short, the technologies used as part of the universal video gateway solution that Petitioners propose should be developed in an open manner, not biased toward one market segment at the expense of others, and should be available on reasonable terms.

interoperability into one consolidated docket, and freeze all separable security waiver requests.

I. Set-Top Box Regulatory Failure Causes Substantial Harm to Competition and Innovation in the Markets for MVPD Services and Consumer Electronics

A loose regulatory framework has permitted the evolution of a multichannel video services market in which the vast majority of subscribers get their set-top boxes directly from their cable operators, rather than an from a variety of manufacturers and sources.[16] Even with respect to the few non-cable operator-supplied boxes available at retail, consumers are often unable to take such set-top boxes with them to a competing service provider because of limitations in the current standard[17] as well as substantial difficulties in getting cable operators to support CableCARDs.[18] The result is a very limited market for set-top boxes, with no meaningful competition to improve quality or reduce

[16] As of September 29, 2009, NCTA reported that 16.7 million CableCARD equipped set-top boxes had been distributed by the 10 largest cable operators in the United States, compared to only 443,000 stand-alone CableCARDs for installation in third-party set-top boxes. Todd Spangler, *Top 10 Cable Operators Have Deployed 16.7 Million CableCard Boxes: NCTA*, MULTICHANNEL NEWS, Sept. 29, 2009, http://www.multichannel.com/article/355815-Top_10_Operators_Have_Deployed_16_7M_CableCard_Boxes_NCTA.php.

[17] For example, the current "plug and play" agreement does not allow for two-way communications; the solution also does not apply uniformly across all MVPD technologies, including satellite and emerging IPTV offerings over fiberoptic or copper lines.

[18] *See, e.g.*, TiVo Community, Comcast Refuses CableCARD Installation (last updated Oct. 6, 2006), http://tivocommunity.com/tivo-vb/archive/index.php/t-318874.html (user posts of stories regarding cable operators initially refusing to install cards, and only complying upon substantial complaint). Whether or not the obstacles to obtaining and installing CableCARDs are the result of indifference, ineptitude, or deliberate behavior, the fact is that despite the integration ban, CableCARD installation is not an easy experience for consumers compared with the installation of a leased box.

prices.[19] These impediments to competition and end-users' ability to obtain and retain their own video devices have also restricted innovation. All of these barriers limit the potential returns on investment in expensive new features that can only provide value if customers can purchase and use the devices. Competition in the market for multichannel video services is also limited by the increasing use of the set-top box as a digital video recorder, with consumers frustrated by the difficulty or impossibility of taking their set-top box (and its associated recordings and customized settings) with them to another provider. All of these obstacles create consumer lock-in by raising switching costs and discouraging customer movement between service providers.

A. Barriers to Entry in the Market for Video Devices Harm Competition

Cable consumers face substantial obstacles to purchasing, installing, and retaining third-party set-top boxes, which translate into substantial barriers to entry for independent manufacturers of set-top boxes. Because so few consumers acquire and use set-top boxes from anyone other than their cable company, the consumers that do obtain their own equipment face substantial hurdles to acquire and install CableCARDs even after they purchase and install CableCARD-ready devices. Service technicians lack familiarity and expertise with CableCARDs, and some refuse to perform the install, while others fail to test cards before installing them—resulting in multiple home visits.[20]

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[19] *See generally* Reply Comments of Free Press, *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, Docket No. 07-269, at 6-9 (filed Aug. 28, 2009) (Free Press MVPD Reply Comments).

[20] *See, e.g.*, Posting of rkoz123 to DSLReports, Cablevision hates CableCARD and TiVo http://www.dslreports.com/forum/r18795724-iO-Cablevision-hates-CableCARD-and-TiVo (Aug. 2, 2007).

Furthermore, CableLabs retains control over the certification of compatible devices, creating additional obstacles to the development and introduction of independently manufactured devices. For example, CableLabs has imposed a high burden for computer equipment manufacturers seeking to offer CableCARD-compliant computers and add-on computer cards.[21] The result of these hurdles is that an electronics company seeking to develop a CableCARD-compatible device intended for independent retail sale to consumers—and therefore dependent on cable operator cooperation for installation of the CableCARD and functionality of the device—faces a high probability of failure due to factors beyond the device manufacturer's control.

These obstacles to development and consumer adoption of video devices constitute substantial barriers to entry into the market for set-top boxes. The effects of these barriers can be seen today. Only two companies (Digeo and TiVo) have any foothold in offering set-top boxes directly to consumers; the few other companies operating in this space do so by contracting with MVPDs.[22] A market in which entry requires either negotiation of a contract for bulk purchase with a

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[21] CableLabs adopted a "rigorous certification program" for the CableCARD 2.0 specification that should have allowed personal computers to be CableCARD compliant. *See, e.g.*, Marc Perton, *CableCARD on Vista to require CableLabs certification*, ENGADGET, Jan. 30, 2006, http://www.engadget.com/2006/01/30/cablecard-on-vista-to-require-cablelabs-certification. Even after Microsoft and Vista received approval from CableLabs to support CableCARDs, in practice, computer manufacturers wishing to build and deploy CableCARD capable devices effectively need to be OEM partners of Microsoft to receive the blessing of CableLabs. *See* Chris Lanier, *The Story of CableLabs Certification*, THE GREEN BUTTON, Nov. 16, 2006, http://thegreenbutton.com/blogs/chris_blog/archive/2006/11/16/149421.aspx.

[22] *See, e.g.*, Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming, *Thirteenth Annual Report*, 24 FCC Rcd. 542, ¶ 63 (2009) ("Thirteenth MVPD Report"). Even some set-top boxes designed around cable's "tru2way" standard are intended only to be rented to consumers by MVPDs. *See* Jeff Baumgartner, *Thomson Tees Up Tru2way Box*, LIGHT READING, Jan. 9, 2009, http://www.lightreading.com/document.asp?doc_id=170160. Additionally, boxes developed for cable are not compatible with other MVPD platforms, such as DBS.

cable operator, or dependence on initial certification and subsequent cooperation at every step of installation from cable operators (who may have a preference for bulk purchase and naturally may favor their own devices), will always present substantial impediments to effective competition.

B. Barriers to Entry in the Market for Video Devices Harm Innovation

In addition to economic harm, the difficulty of developing and selling set-top boxes reduces incentives for technological innovation in consumer electronics.[23] The certification process, largely controlled by cable industry incumbents,[24] cripples the ability of small companies to develop technologies that might disrupt the existing business models of such incumbents.[25] Even if no anti-competitive motives are in play, an unduly restrictive, expensive and lengthy certification process poses a risk that investment in any new technology will yield limited or no return—or that investment in such projects will require additional and unexpected expense for research and modifications to achieve certification.

The current CableCARD standard has inherent substantive limitations beyond the institutional and procedural obstacles described above. In particular, unless they use cable's proprietary "tru2way" middleware, CableCARD-equipped third-party devices generally cannot incorporate on-demand content

[23] For example, Steve Jobs said that Apple would not add traditional set-top box features to the Apple TV because "[t]he minute you have an STB you have gnarly issues, CableCARD, OCAP... that just isn't something we would choose to do ourselves." Ryan Block, Steve Jobs Live from D 2007, ENGADGET, May 30, 2009, http://www.engadget.com/2007/05/30/steve-jobs-live-from-d-2007.

[24] CableLabs is 100% funded by the cable industry and membership is limited to "cable operators." *See* CableLabs, http://www.cablelabs.com/join.

[25] *See, e.g.*, CLAYTON M. CHRISTENSEN, THE INNOVATOR'S DILEMMA (1997).

from cable operators (without a commercial arrangement), because they cannot use the cable infrastructure to exchange the signaling information necessary to select and confirm a program request. Receiving electronic programming guide information poses a similar problem under the current standard. Cable operators converting their systems to "switched digital video" or SDV create similar obstacles, as non-tru2way CableCARD devices are generally not permitted to use the cable plant to send the upstream signals for channel selection, and thus are limited in their choice of channel viewing to a subset of those signals available to a non-CableCARD customer.[26] Limitations on access to program guide information, channels, and on-demand content effectively prevent device manufacturers from innovating in the set-top box user interface in ways that could impact end-users' selection of content and promote interest in diverse sources of video programming.

Even for those companies willing to navigate the hazards of the certification process and able to overcome the technological limitations, the Commission has effectively ignored the *Carterfone*-like provisions of Section 629 that forbid MVPD bundling, and has allowed cable multiple system operators (MSOs) to set video device prices on a discretionary basis that need not be related to cost.[27] Furthermore, the Commission's grant of waivers permitting broad distribution of "low-cost" video devices, which as a result are not

[26] Certain operators provide tuning adapters to CableCARD devices such as TiVo DVRs to enable the tuning of SDV channels. Despite its name, a tuning adapter is merely a modified set-top box. Requiring a consumer to use a cable set-top box to access cable programming does little to enable consumers to rid themselves of dependency on cable-supplied equipment in order to access cable programming.

[27] *See infra*, Section IV A; *infra*, note 36.

compliant with the Commission's rules implementing Section 629, has reduced the potential pool of consumers for compliant set-top boxes.[28]

Without any substantial remaining market for third-party set-top boxes, and with technical and procedural hurdles to developing and offering a third-party device, little incentive remains for investment in innovative and new devices. In fact, little *opportunity* for such innovation is left, thanks to the technical limitations inherent in the current standard.

C. Barriers to Entry in the Market for Video Devices Harm Competition Among MVPDs

The continued scarcity of third-party set-top boxes ultimately harms competition in the market for MVPD services by increasing consumer lock-in effects. Without a viable market for set-top boxes, and without innovative and desirable third-party options, most consumers simply take the box provided by their cable operator. The only decision faced by consumers is whether to get the DVR—a decision increasingly being made in the affirmative.[29] Operator-provided set-top boxes are somewhat fungible. Their feature sets and build quality are comparable, and because they are leased from the operator do not represent a sunk cost to the consumer. Traditionally, non-DVR set-top boxes are returned to the cable operator if a customer switches service providers. But DVRs complicate this process because they may no longer be fungible. A DVR may store end-user recordings and heavily customized recordings settings, including priority levels and a host of other features, and replicating the settings on a new

[28] *See* Free Press MVPD Reply Comments at 7-8.

[29] Bill Carter, *DVR, Once TV's Mortal Foe, Helps Ratings*, N.Y. TIMES, Nov. 1, 2009, http://www.nytimes.com/2009/11/02/business/media/02ratings.html.

DVR may take hours and result in errors. A consumer using an operator-provided DVR therefore has few good options if that subscriber wishes to change MVPDs. The subscriber can (1) give up the DVR, along with all of its recordings and customized settings; (2) attempt to purchase the DVR from the cable operator (likely at a cost that does not consider that the operator often will already have recouped the cost of the device via monthly rental fees) if the device theoretically would work on another system, but then would have to deal with the difficulties of getting the new provider to install a CableCARD; or (3) the subscriber can stick with unsatisfactory cable service. Often, remaining with the same service provider—and continuing to pay the provider's inflated DVR leasing and subscription fee—is the least of the three evils.

II. Consumers Are Harmed by a Lack of Competition in the Video Devices Market

The lack of a competitive market for interoperable video devices also harms consumers. Because the objectives of Sections 629 and 624A have not been fulfilled, consumers eventually can pay more money to lease a device from an MVPD than it would cost them to buy a video device outright. Compounding this problem, the leased video device might not be as capable as a device obtained through retail channels, either because of its limited access to non-MVPD content, or because of an inferior feature set and end-user experience.[30] Additionally, equipment that is not interoperable and portable imposes costs on consumers who move from one location or MVPD to another.

[30] *TiVo HD DVR (20-HD hours) Review*, CNET, http://reviews.cnet.com/digital-video-recorders-dvrs/tivo-hd-dvr-20/4505-6474_7-32511935.html (finding that despite the devices' difficulty integrating the full range of an MVPD's services, "the TiVo HD's excellent onscreen interface and long list of network and Internet features puts it in a class above the generic high-def DVRs offered by most cable providers.").

This is exactly the kind of harm that Congress sought to avoid. For example, when it passed what became Section 624A of the Communications Act, Congress sought to avoid the consumer frustrations arising from incompatible equipment.[31] At the time it was enacted, the legislation that became Section 629 was described as a "proconsumer"[32] provision "designed to make cable equipment cheaper and easier to use for all consumers."[33]

The Commission has recognized the limited consumer choice in video devices. In the *NBP Public Notice #27*, the Commission noted that

> Consumers can access the Internet using a variety of delivery methods (e.g., wireless, DSL, fiber optics, broadband over powerlines, satellite, and cable) on myriad devices made by hundreds of manufacturers; yet we know of no device available at retail that can access all of an MVPD's services across that MVPD's entire footprint.[34]

Indeed, innovation in Internet-connected devices that do not typically access MVPD services is progressing rapidly. Devices such as the Roku, home theater PCs, and the just-announced Boxee Box allow consumers to mix and match programming from a variety of Internet sources. The Commission is right to wonder why the market for video devices able to access MVPD content does not offer similar consumer choice. One reason is that the majority of consumers see no practical alternative to renting video devices from their MVPDs.[35] Initiatives

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[31] *See* Comments of Senator Leahy, 137 CONG. REC. S18376-S18380 (1991).

[32] Comments of Representative Markey, 142 CONG. REC. H1170 (1996).

[33] Comments of Senator Hollings, 142 CONG. REC. S693 (1996).

[34] *NBP Public Notice # 27* at 2.

[35] Based on NCTA statistics, it appears that less than one percent of cable subscribers use CableCARDs in retail devices. *See* Letter of National Cable and Telecommunications Association, CS Docket No. 97-80, at 1 (filed June 26, 2009) (citing figure of 437,800 CableCARDs deployed for use in retail devices by the top 10 MSOs); National Cable and Telecommunications Association, Top 25 MSOs,

such as CableCARD, which were supposed to make it simple for consumers to obtain equipment through normal retail outlets, have not been successful. Because most video devices in consumers' hands are controlled by MVPDs, access to non-MVPD services through MVPD-supplied navigation devices is limited.

These market conditions not only deny consumers choice, but also can lead to consumers paying more to lease an MVPD device than it would cost them to buy a non-MVPD device. According to *Consumer Reports*, boxes rented monthly from a cable company cost an average of $7 per month, per television set,[36] tacking $21 onto the average 3 television set household's monthly bill. Some customers might pay much more than that.[37] Additionally, MVPD customers who bring their own equipment often pay a monthly service charge that assumes the rental of equipment,[38] meaning that the rates charged to such customers may

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http://www.ncta.com/Stats/TopMSOs.aspx (attributing 56,531,000 subscribers to the top 10 MSOs).

[36] *Save a Bundle*, CONSUMER REPORTS MAGAZINE, Feb. 2009 (Cover Story).

[37] For example, the average life of a TiVo DVR is five years. See TiVo Form 10-Q, filed December 9, 2009, *available at* http://investor.tivo.com/phoenix.zhtml?c=106292&p=irol-sec (showing that TiVo recognizes product lifetime subscriptions over 60 months). A normal price for a TiVo DVR is about $300, which translates to $5 per month. Cable operators offer set-top box rentals at prices in the $4 to $15 dollar range, with the lower-end boxes generally less capable than the consumer-owned devices with amortized costs in the same range. For example, RCN Cable offers a digital converter for $3.95 a month (for one device, with additional devices $6.95 per month). But their DVR costs $14.95 per month to rent, which amounts to $897 over 5 years. *See* RCN, http://www.rcn.com/dc-metro/digital-cable-tv/equipment (visited December 10, 2009). By contrast, on December 10th, a TiVo DVR was available for purchase on BestBuy.com for $149.99.

[38] For example, RCN Cable's price list includes "digital converter" as part of the $29.99 "Signature Digital Cable" package. *See* RCN, http://www.rcn.com/dc-metro/digital-cable-tv/services-and-pricing (visited Dec. 10, 2009). The package comes with "44 HD channels." Elsewhere, the RCN website lists the monthly rental fee for an HD converter box as $9.95 per month. RCN, http://www.rcn.com/dc-metro/digital-cable-tv/equipment (visited Dec. 10, 2009). RCN's site does not indicate whether a customer who does not rent an HD converter box from the MVPD can get "Signature Digital

include some bundled equipment fees even though these customers use no MVPD-supplied equipment.

Consumers also have very limited opportunities to obtain interoperable equipment. Video devices designed specially for one MVPD platform are not portable, which means they cannot be used on other MVPD platforms. This raises costs for consumers who wish to change providers. Because MVPD-supplied devices usually are required to access the full range of an MVPD's services, non-MVPD devices must find ways to interconnect with the MVPD devices—often with imperfect workarounds such as infrared repeaters.[39] If non-MVPD devices were able to access video services directly through a gateway, these problems would be eliminated or reduced.

In sum, expeditious grant of this Petition would allow the Commission to remediate the very same consumer harms that Congress sought to avoid by enacting Sections 629 and 624A in the first place.

III. Commission Re-Visitation and Revision of the Rules is Overdue

The Commission's implementation of its current rules to promote video device interoperability has allowed for an increasingly uncompetitive market that bears no resemblance to what Congress intended. These problems delay

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Cable" for $20.04 per month—i.e., the cost of the video service minus the converter box fee. Savvy consumers who use CableCARD-enabled equipment rather than MVPD-supplied set-top boxes may be able to negotiate lower monthly rates. *See, e.g.*, Meg Marco, "Asking Comcast to Lower Your Monthly Bill Results in Comcast Lowering Your Monthly Bill," THE CONSUMERIST, June 22, 2009, http://consumerist.com/2009/06/asking-comcast-to-lower-your-bill-results-in-comcast-lowering-your-bill.html. However, this information is usually not public. One of the drafters of this Petition called RCN to ask about its rate structure with regard to discounts resulting from customer-supplied equipment, and received an unclear response.

[39] TiVo Guides, TiVo IR Control Cable: What Does It Do?, http://tivoguides.com/tivo-ir-control-cable-what-does-it-do/tivo-products.

innovation, harm consumers, and provide little chance of self-correction by the market. The Commission should act now, without further delay, to carry out Congress's intent and alleviate these harms.

The time is right for the Commission to undertake a thorough review and update its rules. The cable industry is in the middle of a transition to all-digital systems, new MVPDs using different platforms are attracting customers, and sales of high-definition devices continue to rise. Furthermore, the Commission has already recognized that video device reform is an essential component of the National Broadband Plan.[40]

A. There is a Clear Basis for Review as Well as Historical Precedent for a Commission Rulemaking

Recognizing that technological change warrants a fresh look at outdated assumptions, Congress mandated in Section 624A itself that

> The Commission shall periodically review and, if necessary, modify the regulations issued pursuant to this section in light of any actions taken in response to such regulations and to reflect improvements and changes in cable systems, television receivers, video cassette recorders, and similar technology.[41]

In its 1998 *Report & Order* regarding the commercial availability of navigation devices, the Commission expressed its strong commitment to interpret and enforce its rules so as to foster the pro-consumer principles that underlay Section 629:

> Our objective thus is to ensure that the goals of Section 629 are met without fixing into law the current state of technology. ...In addition to enforcing the rules we adopt in this Order, we intend to monitor the

[40] *See* FCC, Presentation on "Broadband Gaps" 18 (Nov. 18, 2009), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294708A1.pdf ("[S]et top box innovation gap could hinder convergence").

[41] 47 U.S.C. 544a(d).

> progress of participants in these markets to ensure that the devices continue in the direction of portability, interoperability, wider availability, and increased consumer choice. If we find that market participants are not complying with our rules or are not progressing satisfactorily towards the principles and goals of this proceeding, the Commission will revisit the decisions and take further action to ensure a competitive marketplace and consumer choice in navigation devices. ...Further, the broad goals of this proceeding extend beyond making navigation equipment commercially available, but in fulfilling the promise of the digital age to bring broader choices and opportunities to a wider group of consumers. If, for example, service providers retain the ability to limit substantially consumer access to content, applications, and other services, this result would not achieve the important goals of the statute.[42]

By acting now, the Commission will fulfill its Congressional mandate of periodic review and make good its own commitment to superintend the development of a functioning competitive marketplace for set-top boxes.

With its *Carterfone* decision in 1968,[43] the Commission remedied problems in a market analogous in many ways to the video devices market today. Prior to *Carterfone*, most telephones were rented from AT&T for prices substantially higher than consumers would have paid in a competitive market.[44] The telephones they rented changed little from year to year, decade to decade. The innovation let loose by *Carterfone* set the stage for the Internet by allowing computers to access the telephone network via modems. But more immediately, it allowed a competitive market in telephone equipment to develop, with telephones of all shapes and sizes available at every price point, and allowed previously rare devices like answering machines to become commonplace. On other occasions, the Commission has found that promoting interconnection

[42] Navigation Devices Order at ¶ 16.

[43] *Use of the Carterfone Device in Message Toll Telephone Service*, 13 FCC 2d 420 (1968).

[44] For a particularly egregious example of how uneconomic it can be to rent rather than own telecommunications equipment, *see* USA TODAY, *Woman Paid Thousands to Rent Rotary Phone*, Sept. 14, 2006, http://www.usatoday.com/news/offbeat/2006-09-14-phone_x.htm.

standards benefits consumers. The Commission's Part 68 regulations, which define the physical interface for attaching equipment to a telephone network, were essential in realizing the policy goals behind *Carterfone*. By ensuring that ISPs had access to essential telecommunications facilities in the *Computer Proceedings*, the Commission laid the groundwork for the ISP boom of the 1990s. Additionally, in the 1970s, the Commission laid the regulatory groundwork for the emergence competitive markets in telecommunications services such as long distance. In each of these cases, the Commission promoted competition by adopting interconnection standards.[45]

The Commission already has recognized the similarity between *Carterfone* and Section 629. In the 1998 order, the Commission wrote that

> Just as the *Carterfone* decision resulted in the availability to the consumer of an expanding series of features and functions related to the use of the telephone, we believe that Section 629 is intended to result in the widest possible variety of navigation devices being commercially available to the consumer.[46]

It later elaborated that

> The competitive market for consumer equipment in the telephone context provides the model of a market we have sought to emulate in this proceeding. Previously, consumers leased telephones from their service provider and no marketplace existed for those wishing to purchase their own phone.… As a result of *Carterfone* … the choice of features and functions incorporated into a telephone has increased substantially, while the cost of equipment has decreased.[47]

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[45] Interconnection standards also have benefited markets not under the FCC's jurisdiction. In the personal computer industry, there is a vibrant market for accessories that communicate with each other using USB, SATA, Ethernet, WiFi, and other standards. The Internet itself owes much of its success to the use of communications protocols such as TCP/IP and HTTP, and widely-adopted and well-understood formats such as HTML.

[46] Navigation Devices Order at ¶ 26.

[47] *Id.* at ¶ 11.

The Commission was not the first to see the analogy between the creation of a competitive market in set-top boxes and *Carterfone*. In fact, the same analogy was noted by Representative Markey,[48] Section 629's chief advocate in the House, and by Representative Bliley[49] when he introduced the earlier Competitive Consumer Electronics Availability Act.

The *Carterfone* precedent is clear: when the Commission opens the door to a competitive market in devices that attach to a communications network, consumers benefit. It is also clear that efforts to block innovation in network attachments are ultimately counterproductive.[50]

B. The Cable Transition and Digital Convergence Make Acting Now Vital

Cable's conversion to an all-digital platform demonstrates the dangers to consumers if the Commission fails to act, while creating the perfect opportunity for the implementation of better rules. In fact, the Commission has recently issued a Public Notice on a parallel development—the switch of telephone

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[48] Representative Markey noted that the provision would

> [H]elp to replicate for the interactive communications equipment market the success that manufacturers of customer premises equipment (CPE) have had in creating and selling all sorts of new phones, faxes, and other equipment subsequent to the implementation of rules unbundling CPE from common carrier networks.

Comments of Representative Markey, 142 CONG. REC. H1170 (1996)

[49] Representative Bliley observed that under his bill,

> Commission regulations will assure that converter boxes, interactive communications devices, and other customer premises equipment [would] be available on a competitive basis from manufacturers, retailers, and other vendors who are not affiliated with the operators of telecommunications systems, as is the case in our telephone system today.

Comments of Representative Bliley, 141 CONG. REC. E635 (1995).

[50] See, e.g., *Hush-A-Phone v. United States*, 238 F.2d 266 (D.C. Cir. 1956) (rejecting the Commission's finding that a device could be "deleterious to the telephone system and injures the service rendered by it" even when the device is not physically harmful to the network).

networks to an all-digital, IP-based platform. According to that Notice, "policy has played an important role in ensuring consumers were protected from loss of essential services and were informed of the choices presented by the transition."[51] Similarly, policy will play an important role in ensuring that cable's digital transition is carried out in a way that is most beneficial to the public interest.

There are many problems that could result from Commission inaction in this area. For instance, the use of third-party video devices today often requires analog connections that could become obsolete in an all-digital regime, and the already-deployed switched digital video technology is incompatible with many such devices. Thus, while this digital conversion presents many potential consumer benefits, interoperability may be left behind, and consumer expectations may go unmet.[52]

MVPD control over video devices also poses a barrier to PC/TV convergence. As prices come down, more consumers than ever are purchasing high-definition TVs with digital inputs, and attaching "home theater PCs" (HTPCs) to their televisions. Though HTPCs and dedicated devices (such as the Roku) are capable of accessing "over the top" content through broadband, MVPD-supplied devices are generally more limited. Left to themselves, MVPDs will continue to use technologies and devices that are incompatible with other platforms, as illustrated by cable's use of DOCSIS—nominally an "Internet"

[51] Comment Sought on Transition from Circuit-Switched Network to All-IP Network, *Notice of Inquiry*, DA 09-2517, (Dec. 1, 2009).

[52] *See, e.g.*, Comment of Elliot Linzer, CS Docket. No. 97-80 (filed Nov. 25, 2009).

technology—to deliver MVPD services like video-on-demand.[53] This continued technological fragmentation among MVPD platforms will make it difficult to develop devices that can access both MVPD and non-MVPD services without first going through an MVPD gatekeeper. By acting now to establish a universal video gateway, the Commission will promote the development of converged devices.

C. The Commission Should Establish a Solution Applicable to All MVPDs

The emerging video market is more technologically diverse than the cable-centric world of the 1990s, and this diversity has exposed additional problems in the current FCC rules (which apply only to some platforms, despite Section 629's applicability to all MVPDs) and additional need for regulatory reform. As Congress envisioned, MVPDs using different platforms[54] compete on the basis of the content and quality of their services. Unfortunately, in the absence of universal standards or specifications, this technological diversity has led to fragmentation in the market for video devices, as different MVPDs offer navigation and security functions in different ways.

Without comprehensive implementation of Section 629 for all MVPDs, there will continue to be significant barriers to developing video devices that will work across all platforms. Even though Commission reports on MVPD

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[53] *See* Cisco, RSVP-Based Video on Demand Support Over DOCSIS, http://www.cisco.com/en/US/docs/ios/cable/configuration/guide/VDOC_rsvp_feature.html.

[54] Some of the platforms that MVPDs use are traditional cable service delivered through coaxial cable, next-generation and all-digital cable, video delivered using private IP-protocol networks, video delivered over DSL or other broadband lines, video delivered over fiber to the home, and direct broadcast satellite.

competition speak of a unified "MVPD marketplace,"[55] consumers generally cannot switch from one provider to another without acquiring new video devices. These switching costs limit competition because consumers are not able to experiment with different MVPDs after becoming locked in to one platform. Additionally, consumers should not have to become experts on which video devices work with various MVPDs' systems, nor on the limitations on cable programming that may be available through non-MVPD set-top boxes. With proper implementation of Section 629, and with the consistent enforcement of a few simple rules, the Commission could facilitate the development of a single video device that works across all MVPD platforms, preserving and enhancing MVPD diversity while making life easier for consumers.

The Commission should reject the view, based on now-obsolete assumptions, that disparate regulatory treatment is needed for "new entrants"[56] or other non-cable MVPDs to promote competition. Congress intended, as the Commission has recognized, for Section 629 to apply to all MVPDs, including DBS.[57] The adoption of a universal gateway specification for all MVPDs would promote competition in the multichannel video services market as a whole and

[55] Thirteenth MVPD Report at ¶ 5.

[56] The Commission exempted DBS providers from the rules applied to cable operators in 1998. Navigation Devices Order at ¶¶ 64-66. The intervening decade has shown, however, that addressing common obstacles to competition such as conditional access and home networking limitations is likely to be more productive than addressing issues sequentially. Moreover, it is illogical to treat long-established companies such as EchoStar and DirecTV as "new entrants," or to regulate large telecommunications firms such as Verizon or AT&T differently than cable companies. *Compare* Navigation Devices Order at ¶ 65 ("Total DBS subscribership constitutes only 8% of the MVPD market [in 1998]" *with* Thirteenth MVPD Report at ¶ 75 ("DBS accounts for approximately 29.2 percent of all U.S. MVPD subscribers [as of June 2006].").

[57] *Navigation Devices Order*, 13 FCC Rcd. At 14,800-02, 14,819; Implementation of Section 304 of the Telecommunications Act of 1996, *Order on Reconsideration*, 14 FCC Rcd. 7596, 7613-14 (1999). *See also* Comments of NCTA in CS Docket No. 97-80, at 71-74 (filed Aug. 24, 2007) (cable support of an all-MVPD solution).

increase consumer choice in video devices. DBS and other non-cable MVPDs would benefit from a standard shared with their competitors, as consumers will find it easier to switch to new services. Cable itself would benefit from increased competition among video device makers, a market historically controlled by two dominant manufacturers.[58]

D. Video Device Reform is an Important Component of the National Broadband Plan

The FCC should act now because reform of the rules governing video device interoperability is a natural complement to the Commission's formulation of a National Broadband Plan. As FCC Media Bureau Chief Bill Lake has noted, a more competitive set-top box market would be likely to spur the adoption of broadband.[59] According to a recent presentation by the National Broadband Plan Task Force, the "Television Set-Top Box Innovation Gap … [h]inders convergence, utilization, and adoption," because

1. The convergence of video, TV and Internet Protocol-based technology is creating a new broadband medium that could drive adoption and utilization.

2. Lack of devices is a major barrier for adoption — 99 percent of U.S. households have a TV versus 76 percent with PCs.

[58] Motorola and Scientific American have been described as a "duopoly" in this market, but their dominance has recently shown signs of fading. See Todd Spangler, *The Long, Slow Liberation Of The Cable Set-Top Box*, MULTICHANNEL NEWS, Apr. 27, 2009, http://www.multichannel.com/article/210003-Cover_Story_Set_Tops_Break_Free.php. By enacting new interoperability rules, the Commission will aid new entry into the equipment market.

[59] John Eggerton, *FCC's Bill Lake: Time Of Separate TV and Net Is Ending*, BROADCASTING & CABLE, Nov. 18, 2009, http://www.broadcastingcable.com/article/389671-FCC_s_Bill_Lake_Time_Of_Separate_TV_and_Net_Is_Ending.php.

3. Retail navigation device and set–top-box market competition has not emerged, limiting innovation.[60]

After the presentation, Chairman Genachowski observed that "[w]e know that the television will increasingly become a device for Internet access. So the issue raised today is, can the presence of TVs in everyone's home help … [broadband adoption] for those who don't have computers."[61] The Chairman and Commission staff thus recognize that converged televisions and broadband capable set-top boxes might provide some people a low-cost means of accessing the Internet. The Chairman elsewhere recognized that

> [E]ven when some established entities might understandably prefer otherwise, the right long-term answer for the country, and for the broadest array of businesses and consumers, is to favor freedom, openness and competition.[62]

Following on these comments, the Commission released *NBP Public Notice #27* seeking "comment on how the Commission can encourage innovation in the market for video devices" because "video devices are an important part of developing a National Broadband Plan."[63] The Petitioners respectfully submit that grant of this Petition would promote "freedom, openness, and competition" and serve as an integral component of the National Broadband Plan.

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[60] Press Release, FCC Identifies Critical Gaps in Path to Future Universal Broadband, Nov. 18, 2009, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294706A1.pdf.

[61] Kang, *supra* note 6.

[62] Remarks of Chairman Julius Genachowski to The Innovation Economy Conference, "Innovation in a Broadband World," Dec. 1, 2009, http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-294942A1.pdf, at 5.

[63] *NBP Public Notice # 27* at 1, 2.

IV. The Current Rules Are Substantively and Procedurally Inadequate

The current Commission inherited many problems in the current rules, and continued waiver grants do not improve the situation. The rules are substantively inadequate insofar as they have proven insufficient to promote interoperability and competitiveness in the video device market. Some rules have simply outlived their usefulness because of technological evolution.[64] The rules are also undermined by procedural complexity, with large numbers of waiver requests filed in several related dockets. The Commission can and should act to improve the substance and operation of the rules.

A. The Current Rules Are Substantively Inadequate Because They Do Not Carry Out Congressional Intent

The current rules are substantively inadequate because, even if vigorously implemented, they would not do enough to ensure a competitive, interoperable marketplace in video devices. For example, the Commission required the use of a "separable security system," which practically speaking means CableCARD technology alone, in the belief that a small plug-in card performing security functions would be provided by each MVPD and attached to televisions or recording devices purchased at retail.[65] Early implementation of separable security requirement proved inadequate to facilitate adoption of independently manufactured and marketed devices, as CableCARD-equipped devices have been unable to access the full range of programming offered by MVPDs without

[64] For example, the rule requiring that devices support IEEE 1394 seems to have little consumer benefit, because that standard (due to cost and other reasons) has primarily been adopted in narrow markets (e.g. digital video cameras and Macintosh computers), rather than broadly among consumer electronics devices.

[65] *See* 47 C.F.R. § 76.1204(a)(1); *see also supra* note 9 (detailing Commission implementation orders and extensions to deadline).

extra functionality in the device.[66] Furthermore, satellite television providers never settled on a common separable security system with terrestrial MVPDs.

CableCARD licenses pose additional problems, as the CableCard-Host Interface License Agreement (CHILA) and the OCAP Implementer License Agreement (O-ILA), themselves do not comply with Sections 76.1200 to 76.1205 of the Commission's rules.[67] The licenses also require manufacturers to give vague warranties against "harm to the service" (not limited to electronic or physical harm or theft of service); incorporate by reference a host of compliance rules and robustness rules that restrict features, limiting competitive innovation; and still require licensees to obtain approval for new devices from CableLabs, with no meaningful recourse or appeal of its decisions.

The FCC's current rules allow cross-subsidization of video device costs through service charges, and thus limit the ability of third parties to compete. Such practices erect barriers to entry, harm consumers, and violate the clear directives of the statute. Section 629 states that "equipment used by consumers to access multichannel video programming and other services offered over multichannel video programming systems" may be offered to consumers by MVPDs, but that any charges for such equipment must be "separately stated and not subsidized by charges for any such service."[68] However, contrary to the clear

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[66] *See supra*, note 35.

[67] For example, 47 C.F.R. § 76.1203 states that "such standards [imposed by cable operators] shall foreclose the attachment or use only of such devices as raise reasonable and legitimate concerns of electronic or physical harm or theft of service." Cable's restrictions on, e.g., combining cable content and Internet content in a single UI, raise no reasonable concern about theft of service or electronic harm.

[68] 47 U.S.C. § 549(a).

directive of Congress, the FCC has adopted rules that expressly *allow* such subsidization.[69]

Rules designed expressly for cable are inadequate in today's multichannel video marketplace. The National Telecommunications Cooperative Association and the Organization for the Promotion and Advancement of Small Telecommunications Companies have argued that

> the rules were primarily designed for traditional coaxial cable equipment, leaving a degree of uncertainty regarding equipment designed for MVPDs using innovative broadband technologies to deliver video services….[70]

The cable industry has noted the disparate regulatory treatment of its platform as compared with its competitors,[71] and any circumstances the Commission may once have relied on to justify this disparate treatment have long passed. The Commission should grant the Petition and ensure that a single video gateway specification applies to all MVPDs.[72]

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[69] Petitioners submit that the Commission has incorrectly interpreted Section 623(a)(7)(A) of the 1996 Act, 47 U.S.C. § 543(a)(7)(A), as allowing some kinds of cross-subsidization and below-price marketing. *See* 47 C.F.R. § 76.923(j) ("A cable operator may offer equipment or installation at charges below [cost], as long as those offerings are reasonable in scope in relation to the operator's overall offerings in the Equipment Basket and not unreasonably discriminatory."). However, the legislative history of Section 543 indicates that this section was aimed explicitly at promoting a "broadband, two-way telecommunications infrastructure," H.R. Rep. No. 104-458, at 167 (1996) (Conf. Rep.), and thus should not be read as in conflict with Section 629. However, one of the FCC's rule implementing Section 629, 47 C.F.R. § 76.1206, defers to 47 C.F.R. § 76.923, improperly allowing Section 623 to nullify Section 629.

[70] Petition for Clarification or Waiver of the National Telecommunications Cooperative Association and the Organization for the Promotion and Advancement of Small Telecommunications Companies, CS Docket No. 97-80, (filed May 4, 2007), at 2.

[71] *See generally Charter Communications, Inc. v. F.C.C.*, 460 F.3d 31 (2006).

[72] *See* McSlarrow Letter at 3 (suggesting that the lack of a "vibrant retail market for video devices" may be due to the fact that "DBS providers, AT&T, and other facilities based-competitors that have captured a large share of the market do not support CableCARD….").

B. The Current Rules Are Undermined by Waivers and Attendant Procedural Complexity

In addition to these substantive problems, the large number of related open proceedings on set-top box issues at the Commission creates an atmosphere of regulatory uncertainty. Waivers have undermined even the modest steps toward interoperability the Commission has taken. The following table is a representative sample of some of the recent waiver petitions, orders, and open proceedings regarding the continued placement in service of set-top boxes that do not comply with the Commission's rules.

Applicant (if waver)	**Issue**	**Proceeding Number**	**Status**
Evolution Broadband, LLC	Integrated set-top box ban	CSR-7902-Z CS Docket No. 97-80	Granted (5/28/09)
Cable One, Inc.	Integrated set-top box ban	CSR-8080-Z CS Docket No. 97-80	Granted (5/28/09)
Motorola, Inc.; Cisco Systems, Inc.; Pace Americas, Inc.; Thomson, Inc.	Integrated set-top box ban	CSR-8175-Z CSR-8176-Z CSR-8177-Z CSR-8178-Z	Granted (8/24/09)
Nagravision USA	Integrated set-top box ban	CSR-8190-Z	Granted (10/2/09)
Cablevision Systems Corporation	Encryption prohibition of broadcast basic programming	MB Docket No. 09-168	Pending
Time Warner and Cox Communications	Switched-digital transition	File Nos. EB-07-SE-351, EB-07-SE-352 NAL/Acct. Nos. 200832100074, 200932100001, 200932100002, 200932100003, 200932100008, 200932100022, and 200932100023 FRN Nos. 0018049841, 0016034050	On Review
Intel Corporation	IEEE 1394 set-top box requirement	CS Docket No. 97-80	Pending
Motion Picture Association of America, Inc.	Selectable Output Control	MB Docket No. 08-82	Pending

Lafayette Utilities System	Integrated set-top box ban	CS Docket 97-80	Pending
Tivo, Inc.	IEEE 1394 set-top box requirement	CS Docket No. 97-80	Pending
	In the Matter of Compatibility Between Cable Systems and Consumer Electronics Equipment	PP Docket No. 00-67	Pending
	Annual Assessment Of The Status Of Competition In The Market For The Delivery Of Video Programming	MB Docket No. 07-269	Pending
FutureWei Technologies, Inc., d/b/a/ Huawei Technologies	Petition	CSR 8206-Z	No Action
Broadstripe, LLC f/k/a Millenium Digital Media Systems, LLC	Petition	CSR 7625-Z	No Action
Western Wisconsin Communications LLC	Petition	CSR 8184-Z	No Action
Fairfield Communications, Inc.	Petition	CSR 8152-Z	No Action
James Cable, Inc.	Order	CSR 7216-Z	Granted
Massillon Cable TV	Petition	CSR 7229-Z	No Action

Table 1: Representative Video Devices Proceedings

These waivers and the resulting inconsistency in enforcement create an atmosphere of regulatory uncertainty. They limit innovation and investment, and remove the incentive to develop compliant, low-cost video devices.[73] Rather than being reserved for special situations, the waiver process is being used to

[73] At least one company claims to have developed a low-cost device that complies with the Commission's rules, arguing that "without the waivers the Commission has granted, low-cost compliant STBs would have been available far sooner." Comments of IPCO, LLC., CSR-8206-Z, Oct. 8, 2009, at 2; *see also* Jeff Baumgartner, "Box Maker Blames FCC for Everything," Light Reading, Dec. 9, 2009, http://www.lightreading.com/document.asp?doc_id=185586.

work around and modify the current rules without the appropriate level of process and deliberation. Petitioners ask that the Commission immediately freeze all separable security waiver grants until the rules are updated, and that the Commission henceforth use the waiver process only for extraordinary, unforeseen situations.

V. The FCC Should Create a New Universal Video Gateway

The Commission should adopt a standards-based video gateway specification[74] as the means by which it implements Section 629. The gateway would be the connection between the MVPD's network and the consumer's video devices, exposing all MVPD services to and would perform functions roughly analogous to those that a network router performs in a consumer's home computer network. This gateway would fulfill the idea of the "home gateway device" recently discussed in an FCC presentation, which would be "a small, low-cost device whose only functionality is to bridge the proprietary MVPD network elements (conditional access, tuning & reception functions) to common, open standard widely-used in home communications interfaces" and which would "enable[] a retail navigation device to operate on all MVPD platforms."[75]

Only a standards-based specification for attaching devices to video networks will ensure interoperability and promote competition. In this section, Petitioners address what the requirements should be for any such "standard." In addition, Petitioners have propose below model rules that will offer guidance to

[74] A gateway is a "transmission connection between networks that handles information flow and typically performs bandwidth and protocol adjustments and conversions…[that] may also perform security functions." JULIE K PETERSON, THE TELECOMMUNICATIONS ILLUSTRATED DICTIONARY 395 (2002).

[75] FCC, Presentation on "National Broadband Plan Policy Framework" 20 (Dec. 16, 2009), http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-295259A1.pdf.

the Commission, as well as technical documentation intended as a starting point for further analysis.

A. The New Gateway Must Be Standards-Based

Proprietary specifications have their place in the market. Entities that develop and promote them should be expected to promote the interests of their members or shareholders, and not of other industries or their competitors, both in the technologies chosen and the licenses used for those private specifications. With this understanding, the Commission should not turn to private companies or industry-specific research groups for technology solutions intended to be adopted by many industries. Instead, the Commission should focus on establishing a standards-based process for selecting a universal video gateway.

Not only would facilitating a standards-based gateway using an open process make for good policy, it is also a legal requirement. Section 629 instructs the Commission to develop its regulations "in consultation with appropriate industry standard-setting organizations."[76] The kinds of organizations intended by Congress, as explained by the 1996 Act's Conference Agreement, include "IEEE … MPEG, ANSI and other appropriate bodies."[77] It was Congress' intent that the chosen technology for consumer electronics interoperability be a standard developed according to the guidelines of a recognized standards-setting body, and not merely a technology chosen by one industry and presented to the Commission as a *fait accompli*. Provided that the individual technologies

[76] Telecommunications Act of 1996, PL 104-104 § 629; 47 U.S.C. § 549

[77] Telecommunications Act of 1996, Conference Report No. 104–458, page 181, available at http://frwebgate.access.gpo.gov/cgi-bin/getdoc.cgi?dbname=104_cong_reports&docid=f:hr458.104.pdf

used in the universal video gateway are all standards, a rulemaking proceeding before the Commission provides the necessary process to ensure that the gateway as a whole is technologically and economically workable, and that it does not favor one industry over another.

B. A "Standard" Has Certain Minimum Requirements

Because the chosen technologies must be "standards," they must have been developed, at a minimum, in accordance with the American National Standards Institute's criteria for becoming an ANSI standard, or in accordance with comparable guidelines. As ANSI writes, the hallmarks of its process ensure that standards are "equitable, accessible, and responsive."[78] As described in one document, these hallmarks include:

- Participation is open to all interested stakeholders
- Balance of interests shall be sought
- Consensus must be reached by representatives from materially affected and interested parties in an environment that is free from dominance by any party
- Standards are required to undergo public reviews during which any member of the public may comment
- Comments from the consensus body and public review period must be responded to in writing
- All unresolved objections, attempts at resolution, and substantive changes to text are provided to the ANS consensus body for review prior to final vote
- An appeals process through the standards developer to address procedural concerns is required[79]

These requirements are intended to insure that all interested parties have input into the standards, so that the resulting technology has a wide base of support,

[78] American National Standards Institute, Value of the ANS Designation 3 (2009), http://publicaa.ansi.org/sites/apdl/Documents/News%20and%20Publications/Brochures/Value%20of%20the%20ANS.pdf.

[79] *Id.* For a more comprehensive examination of ANSI standard requirements, see ANSI, 2009 ANSI Essential Requirements, http://publicaa.ansi.org/sites/apdl/Documents/Forms/DispForm.aspx?ID=65515.

and is not biased towards one market segment at the expense of the others. Only by ensuring development of standards in accordance with similar processes can the Commission promote widespread adoption of the universal video gateway by many different actors. In conducting its rulemaking proceeding concerning the standards-based gateway upon grant of this Petition, the Commission should be guided by these principles.

C. The New Gateway Must Not Be Offered with Restrictive License Provisions

There is some disagreement as to what the term "open standard" means.[80] ANSI believes that standards developed according to its criteria should be considered "open standards,"[81] while others argue that any intellectual property contained as part of an open standard must be available on a royalty-free basis.[82]

Existing, widely-used and royalty-free technologies are preferable when possible—as the FCC has noted, the non-proprietary nature of many Internet technologies has contributed its success[83]—but may not be possible in all areas. While the technologies the FCC may endorse do not necessarily have to be royalty-free (or outright free of IP encumbrances), any IP contained within a

[80] Of course, mere use of the term "open," or assurances that an organization intends to work collaboratively with others, are not enough for a technology to be a "standard," much less an "open standard."

[81] ANSI, Current Attempts to Change Established Definition of "Open" Standards, May 2005, http://publicaa.ansi.org/sites/apdl/Documents/Standards%20Activities/Critical%20Issues%20Papers/Open-Stds.pdf.

[82] European Interoperability Framework for pan-European eGovernment Services 9, http://ec.europa.eu/idabc/servlets/Doc?id=19528. Leaked copies of version 2.0 of the framework show the European Commission backing away from such a robust view of "openness." See Wikileaks, European Interoperability Framework 2 draft, 2009, http://www.wikileaks.de/wiki/European_Interoperability_Framework_2_draft,_2009.

[83] Preserving the Open Internet, GN Docket No. 09-191, *Notice of Proposed Rulemaking*, FCC 09-93, ¶ 3 (rel. Oct. 22, 2009).

standard must be available to all potential licensees on reasonable and nondiscriminatory (RAND) terms.[84] Licensees should not have to sign non-disclosure agreements or meet other unreasonable requirements to have access to technology, and the licenses should be offered to all comers on materially similar terms. Only full disclosure of IP interests by all parties can avoid the kinds of lawsuits endemic to the wireless industry,[85] and the problems pointed out by CUTT FAT during the DTV transition.[86]

In addition to making any relevant technology standards available on RAND terms, it is important that there be no other kinds of restrictive licensing provisions standing in the way of building a device that connects to the gateway. For example, because the tru2way specification is controlled by the cable industry, it can only be licensed on terms favorable to that industry.[87] Because of the terms that the cable industry includes in its specification, a device manufacturer is required to cede the user interface of its device to the MVPD—a situation analogous to an ISP requiring the use of a non-configurable browser to access certain Internet content. Consequently, innovation has been stifled and consumers have not embraced tru2way devices at retail. Additionally, in order to even view the tru2way specification it is necessary to sign a non-disclosure

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[84] For an introduction to the RAND concept, see JORGE L. CONTRERAS, STANDARDS DEVELOPMENT PATENT POLICY MANUAL 22 (2008).

[85] *See, e.g., Qualcomm Inc. v. Broadcom Corp.*, 539 F.Supp.2d 1214, (S.D.Cal. 2007); Saul Hansell & Kevin J. O'Brien, *In Lawsuit, Nokia Says iPhone Infringes Its Patents*, N.Y. TIMES, Oct. 22, 2009, http://www.nytimes.com/2009/10/23/technology/companies/23nokia.html.

[86] *See* Coalition United to Terminate Financial Abuses of the Television Transition, http://www.cutfatt.org/index.html; Eric A. Taub, "Vizio and Westinghouse Want Your Help," N.Y. Times Gadgetwise Blog, Mar. 20, 2009, http://gadgetwise.blogs.nytimes.com/2009/03/30/vizio-and-westinghouse-want-your-help.

[87] *See supra*, Section IV A.

agreement. By contrast, while standards are not always available free of charge, the details of their specifications are generally available to be inspected and discussed by any interested party on reasonable terms. If it avoids simply endorsing a specification created by one industry and instead adopts a standards-based approach, the Commission will avoid the kinds of disputes engendered by its navigation devices rules thus far.

D. The New Gateway Should Provide a Number of Technical Capabilities

Because the universal video gateway should be developed in accordance with the principles guiding leading standards organizations, it would be premature for Petitioners to suggest what the precise standards should be. However, Petitioners attach an Appendix to this Petition that provides a useful framework for conceptualizing what capabilities the new universal video gateway should provide.

The universal video gateway Appendix is intended to be a starting point, not the final word, in aiding the Commission's analysis of the relevant technologies. The gateway specification should provide standards for (1) a physical connection, (2) a communication protocol, (3) authentication, (4) service discovery, and (5) content encoding. By analyzing the capabilities of the universal video gateway according to these functional elements, the Commission will ensure that the standards chosen are appropriate.[88]

[88] Although Petitioners ask for a "universal" gateway, it is not a requirement that the equipment required to communicate with each kind of MVPD be included as part of each device. (Nor do Petitioners propose that such devices be discouraged.) Rather, the gateway is "universal" in that it is a common translator between diverse MVPD platforms and consumer electronic devices, analogous to how DSL modems and cable

It is important that the universal gateway not provide unnecessary capabilities or restrictions that limit the ability of the consumer electronics industry to customize its devices, or that otherwise limit competition in the market for set-top boxes, televisions, and other devices. The gateway should not provide for a uniform user interface, as the user interface is a key differentiator of one device from another, and a fertile ground for innovation. The network interface must be a standard, not an implementation.[89] Electronics companies must be free to innovate with different implementations of the standard, in the same way that Microsoft, Mozilla, and Apple develop their own browsers that each implement the same standards (HTTP and HTML). The marketplace may settle on a standard middleware layer or common APIs for video devices, but those kinds of technologies should not be part of the gateway. Since a key way in which video device makers will compete with one another is through the quality of the non-MVPD services they provide, the gateway should allow for differentiation in this regard.

E. Model Rules

To guide the Commission's thinking, Petitioners offer the following models for rules implementing the gateway standard.

1. *Definitions.*
   (a) A video device is a piece of consumer equipment that accesses or communicates with MVPD content.
   (b) MVPD content includes all programming and services offered by an MVPD, including video on demand, all linear and broadcast channels, switched digital channels, and program guide information.

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modems both offer the services of different networks to consumer devices in a uniform way.

[89] As with TCP/IP, a reference implementation could be a valuable tool. *See generally* W. RICHARD STEVENS & GARY R. WRIGHT, TCP/IP ILLUSTRATED: THE IMPLEMENTATION (1995).

(c) The universal video gateway standard is a specification chosen by the Commission that allows video devices to interact with MVPD content, regardless of MVPD platform.

2. *Availability of services and content to the universal video gateway.*
All content offered by an MVPD over its network must be available to devices that use the universal video gateway.

3. *Use of gateway.*
Any devices offered for sale or rent by MVPDs to their customers must access the MVPD's content only by using the universal video gateway.

4. *Lawful use.*
MVPDs may not prevent their customers from making lawful uses of MVPD content.

5. *Source restrictions.*
MVPDs may not prevent their customers from using devices that access content other than MVPD content, nor prevent device makers from offering devices that integrate MVPD and non-MVPD content in the method of the device maker's choosing.

6. *Nondiscriminatory price structures.*
MVPDs may not use discriminatory price structures to limit equipment competition.
(a) Discriminatory price structures include, but are not limited to: charging different rates to customers for services on the basis of the equipment such customers use, cross-subsidizing between services and equipment, or offering equipment discounts or subsidies to consumers who subscribe to other kinds of services (such as broadband or voice) that are offered by the MVPD without making available the same discount to users of non-MVPD equipment.
(b) To ensure compliance with this rule, MVPDs must itemize charges for equipment they provide to consumers, and inform consumers that any equipment rental fees or other charges will not apply if the consumer supplies his or her own equipment.
(c) If equipment is included in a package or bundle of services, and a customer supplies his own equipment, a customer must receive a discount equivalent to the leased-equipment charge.

7. *Burden of proof.*
A party who believes that an MVPD has violated these rules must file a complaint with the Commission setting forth a *prima facie* case. If the Commission determines that the case has merit, the burden is on the MVPD to prove that its conduct was consistent with the Commission's rules.

CONCLUSION

For the foregoing reasons, Petitioners ask that the Commission (1) combine all open proceedings relating to cable set-top box commercial availability and device interoperability, (2) freeze all separable security waiver requests until the rules are updated, and (3) issue a Notice of Proposed Rulemaking proposing to adopt a standards-based video gateway specification for accessing video services applicable to all MVPDs.

Respectfully submitted,

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APPENDIX
Technical Framework for a Video Gateway

Below is a framework for a universal video gateway that would serve as an interface or demarcation point between an MVPD's proprietary network and all consumer video devices that are part of a home network based on open Internet standards.[†] The gateway would be based on open standards, and would be analogous to a network router in a home computer network. Any differences in network protocols, technologies, security, etc. across different MVPD networks would be "hidden" behind a common interface at the video gateway, allowing MVPDs to upgrade or change technologies within their networks without rendering obsolete existing consumer video devices. A universal video gateway would allow consumers to use any video device to view MVPD-delivered signals, thereby giving them more choices.

The universal video gateway should provide standards for: (1) a physical connection, (2) a communication protocol, (3) authentication, (4) service discovery, and (5) content encoding.

1. Physical Connection

The gateway would interface with an MVPD's proprietary network while providing a standard packet network interface that would interconnect with a range of consumer video devices. The gateway would provide, at minimum, a standard 100 Mb/s Ethernet port, as well as, potentially, other interfaces such as wireless (e.g., WiFi).

2. Communication Protocol

The gateway would use standard Internet protocols built upon TCP/IP and HTTP. These protocols are ubiquitous and are supported by all types of consumer video devices.

3. Authentication

MVPDs may choose to require that consumer devices be authenticated to confirm that the consumer is subscribed to the requested services. Such authentication may be accomplished in several ways, including identifying devices using standard certificates. Note that the authentication requirements should be the same for MVPD-provided devices as they are for unaffiliated retail devices.

[†] Note that this framework provides information regarding the capabilities of a proposed universal video gateway, along with suggestions for specific standards where appropriate. Petitioners do not suggest that only technologies mentioned here are appropriate for the gateway,

4. Service Discovery

The gateway must provide service discovery information that allows consumer devices to detect gateways and provides information as to what services are available. The gateway can be advertised using the Internet protocol "Zeroconf," for example, while information regarding services available (including, for example, video-on-demand content) can be made available using RSS 2.0 (Really Simple Syndication).

5. Content Encoding

The gateway should support at least a small number of content stream encodings, though more could be supported over time. The gateway should support, at minimum, MPEG-2 and MPEG-4 video streams, and MPEG-2 audio in an MPEG-2 transport stream. These formats are well-defined by standards bodies such as ATSC and SCTE.

The above outlines the gateway capabilities for which standards should be established. Apart from the categories discussed above, device manufacturers should retain maximum design flexibility.